DOCUMENT RESUME

ED 376 943 PS 022 720

AUTHOR Boidy, Tish; Moran, Michelle
TITLE Improving Students' Transfer of Learning among Subject Areas through the Use of an Integrated Curriculum and Alternative Assessment.
PUB DATE Apr 94
NOTE 61p.; M.A. Action Research Final Report, Saint Xavier University.
PUB TYPE Dissertations/Theses - Undetermined (040)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Elementary Education; *Elementary School Curriculum; Elementary School Students; Evaluation Methods; *Integrated Curriculum; Portfolios (Background Materials); Program Effectiveness; *Student Evaluation; *Transfer of Training
IDENTIFIERS *Alternative Assessment; Thinking Across the Curriculum

ABSTRACT

An intervention program sought to improve third- and fifth- grade students' ability to transfer learning among subject areas and to apply their learning to everyday occurrences. Surveys and interviews revealed the lack of student transference of knowledge among subject areas; teacher surveys and an interview with the curriculum director provided additional evidence. Probable cause of students' inability to make connections was thought to be related to curriculum overload, fragmentation, and irrelevancy; time, schedule restraints, and teacher reluctance to use innovative units also contributed. Two intervention strategies were used: (1) curriculum integration; and (2) use of alternative assessment. Integrated units connected core disciplines, incorporated technology into the classroom, and demonstrated the relevance of curriculum content in real-life settings. Methods of student assessment included portfolios, journals, writing across the curriculum, and testing that included higher-order thinking questions. The program was evaluated using surveys and interviews. Evaluation showed that the lack of connection across subject areas in school was reduced, and that students were better able to transfer knowledge among subject areas and to apply school-learned skills to everyday life. (Six appendices include interviews and surveys, criteria sheets, writing prompts, and a higher order thinking skills test.) (TM)

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IMPROVING STUDENTS' TRANSFER OF LEARNING AMONG SUBJECT AREAS THROUGH THE USE OF AN INTEGRATED CURRICULUM AND ALTERNATIVE ASSESSMENT

by

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Submitted in partial fulfillment of the requirements for the degree of Master's of Arts in Teaching and Leadership

Saint Xavier University - IRI
Field-Based Master's Program

Action Research Final Report
Site: Wheeling, IL
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ABSTRACT

AUTHOR: Tish Boidy and Michelle Moran SITE: Wheeling
DATE: April, 1994

TITLE: Improving Students' Transfer of Learning Among Subject Areas Through the Use of Integrated Curriculum and Authentic Assessment

ABSTRACT: This report describes a program for improving students' ability to transfer learning among subject areas, and apply what is learned in school to everyday occurrences. the targeted population consists of third and fifth grade elementary students in a middle class, suburban community located in Wheeling, Illinois. The problem of students not making learning connections is documented through surveys revealing the number of students transferring knowledge among the subject areas. Further documentation was obtained through teacher surveys and an interview with a curriculum director.

Analysis of probable cause data revealed that students' inability to make connections is related to curriculum overload, fragmentation, and irrelevancy. In addition, time, schedule restraints, and teacher reluctance to use innovative units contribute to the problem.

Solution strategies suggested by research relevant to the problem, combined with an analysis of the problem setting resulted in the selection of two major categories of intervention: integration of the curriculum and the use of alternative assessment. The problem of the lack of connectedness in school was reduced. The students were able to make transfers among subject areas and apply the skills learned in school to everyday life.

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Chapter 1A

STATEMENT OF PROBLEM AND DESCRIPTION OF CONTEXT

Problem Statement

The fifth grade students at the target elementary school exhibit an inability to transfer learning among subject areas and achieve the skills necessary to be successful in various academic disciplines as evidenced by teacher tests and observations.

Description of Immediate Problem Setting

Walt Whitman Elementary School consists of 601 kindergarten through sixth grade students. The ethnic breakdown of students is as follows: 55 percent white, 35 percent hispanic, 6 percent black and 4 percent Asian or Pacific Islander. Sixteen point nine percent of the students are classified low income and 5.6 percent of the students have limited English proficiency. The attendance rate at Whitman is 95 percent, while the student mobility rate is 21.6 percent.

Heading the 47 staff members at Whitman is one male principal. There are 27 grade level teachers; 25 full-time and two part-time. Of the 25 full-time, there is one primary English as a second language teacher and there are four intermediate bilingual teachers. The specialists include one library media specialist, one art teacher, one music teacher, one computer writing teacher, and one full-time and one part-time physical education teacher. There are also four special education

teachers, two part-time social workers, and one part-time psychologist. There are four aids/assistants in the building consisting of one health assistant, one library assistant, one bilingual assistant and one part-time learning disability assistant. The two band and orchestra teachers are in the building on a part-time basis. The auxiliary staff includes one secretary, three custodians, and one part-time nurse. The school personnel is 100 percent white and 90 percent female.

The average class sizes are as follows: kindergarten - 18.3; first grade - 24.5; second grade - 24.3; third grade - 20.3; fourth grade regular - 26; fourth grade bilingual - 18.5; fifth grade regular - 24; fifth grade bilingual - 28; sixth grade regular - 22; and sixth grade bilingual - 26. The class sizes for the intermediate grades increase during certain subjects due to the mainstreaming of bilingual students.

Description of Surrounding Community

Walt Whitman Elementary School is one of 11 schools in Community Consolidated School District 21. The district is located in Wheeling, Illinois, a northwest suburb in Cook County, outside of Chicago. Nine elementary schools feed into two junior highs which in turn feed into three high schools. The total enrollment for the district is 6,146 of which 75.4 percent are white, 14.7 percent are hispanic, 7.3 percent are Asian/Pacific Islander, 2.4 percent are black and 0.2 percent are Native American.

According to The Sourcebook of Zip Code Demographics the population of Wheeling in 1990 was 31,816, of which 90.3 percent are white, 1.7 percent are

black, 0.2 percent are Indian, 4.3 percent are Asian/Pacific Islander and 3.5 percent are other. Of the white population 9 percent are of hispanic origin. The 1990 population of Wheeling was 31,816. Married couples comprised 83.9 percent of family households and single parent households were 16.1 percent. Of the family households, 46.2 percent included children and the average size of the family household is 2.91. The socio-economic status of the village indicates the median family income to be $45,502 and per capita income $18,648. The median home price is $123,750 and the median rent is $599. Wheeling has many industrial parks and is the national headquarters of many large companies employing over 450 workers. These companies include Ekco, Orval Kent Food Company, Wickes Furniture and Kenny Construction. Along with Prospect Heights, Wheeling owns a small airport called Palwaukee. Recent commercial developments include Wal-Mart, Sam's Club and several small strip malls. In 1992 voters also approved a new water park and an adjacent park district facility.

Regional and National Context of the Problem

Emerson as cited by Fogarty (1991) said:

> To the young mind everything is individual, stands by itself. By and by, it finds how to join two things and see in them one nature; then three thousand . . . discovering roots running underground whereby contrary and remote things cohere and flower out from one stem.

The fragmented schedules of today's classroom do not encourage this coherence. In addition, they do not provide relevance to students' daily life in their real world (Everett, 1992).

In a traditional classroom, the day is rigidly structured with each subject being taught as an individual entity. This atmosphere does not expose students to flexible scheduling or integration of topics. Therefore, students are not encouraged to make the connection of newly acquired knowledge or skills with the entire curriculum. More importantly, students are not taught to use classroom skills in the real world.

If we wish to prepare students for real life situations now and in the future, we must help them to make natural connections using all subjects, current event issues, and student concerns (Jacobs, 1991). The fragmented model used in traditional classrooms today needs to be reevaluated with students' future success as the number one priority.

Chapter 1B

STATEMENT OF PROBLEM AND DESCRIPTION OF CONTEXT

Problem Statement

The third grade students at the target elementary school exhibit an inability to transfer learning among subject areas and achieve the skills necessary to be successful in various academic disciplines as evidenced by teacher tests and observations.

Description of Immediate Problem Setting

A suburban K-6 elementary school located northwest of Chicago, Illinois consists of 551 students. This elementary school is one of three bilingual centers and one of nine-K-6 elementary buildings that feed into two junior high schools.

The student population is 51.5 percent White, 1.5 percent Black, 40.3 percent Mexican-American, 6.4 percent Asian/Pacific Islander and 0.4 percent Native American. Twenty-seven point nine percent of the students are low income students with twenty-five percent of the students being limited English proficient. Limited English proficient students are those who have been tested and found eligible for Bilingual Education. Low income students are pupils from families receiving public aid or being supported in foster homes with public funds or eligible to receive free or reduced-price lunches. The attendance rate at this school is 94.9 percent. The student mobility rate is 14.4 percent. This school has no chronic truants.

The staff of this school includes: one principal, twenty-three kindergarten through sixth grade teachers, four of those being bilingual teachers, two special education teachers including an assistant, one multi-media specialist and an assistant, one physical education teacher, one Chapter I reading specialist, one part-time computer lab teacher, one full-time social worker, one full-time speech therapist, one art instructor and one music teacher. Auxiliary personnel include: one secretary, one full-time health aid, one part-time nurse and three custodians. There is a part-time psychologist and a part-time bilingual psychologist available upon request.

The Chapter I reading specialist services 50 students and the special education resource persons service 35 children daily. These teachers are also involved in serving 47 children who do not meet state guidelines for learning disabilities/behavior disorders. They conduct a morning/afternoon support group. The speech therapist has a case load of 25 students.

Description of Surrounding Community

Mark Twain Elementary School is one of 11 schools in Community Consolidated School District 21. The district is located in Wheeling, Illinois, a northwest suburb in Cook County, outside of Chicago. Nine elementary schools feed into two junior highs which in turn feed into three high schools. The total enrollment for the district is 6,146 of which 75.4 percent are white, 14.7 percent are hispanic, 7.3 percent are Asian/Pacific Islander, 2.4 percent are black and 0.2 percent are Native American.

According to The Sourcebook of Zip Code Demographics the population of Wheeling in 1990 was 31,816, of which 90.3 percent are white, 1.7 percent are black, 0.2 percent are Indian, 4.3 percent are Asian/Pacific Islander and 3.5 percent are other. Of the white population 9 percent are of hispanic origin. The 1990 population of Wheeling was 31,816. Married couples comprised 83.9 percent of family households and single parent households were 16.1 percent. Of the family households, 46.2 percent included children and the average size of the family household is 2.91. The socio-economic status of the village indicates the median family income to be $45,502 and per capita income $18,648. The median home price is $123,750 and the median rent is $599. Wheeling has many industrial parks and is the national headquarters of many large companies employing over 450 workers. These companies include Ekco, Orval Kent Food Company, Wickes Furniture and Kenny Construction. Along with Prospect Heights, Wheeling owns a small airport called Palwaukee. Recent commercial developments include Wal-Mart, Sam's Club and several small strip malls. In 1992 voters also approved a new water park and an adjacent park district facility.

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In a traditional classroom, the day is rigidly structured with each subject being taught as an individual entity. This atmosphere does not expose students to flexible scheduling or integration of topics. Therefore, students are not encouraged to make the connection of newly acquired knowledge or skills with the entire curriculum. More importantly, students are not taught to use classroom skills in the real world.

If we wish to prepare students for real life situations now and in the future, we must help them to make natural connections using all subjects, current event issues, and student concerns (Jacobs, 1991). The fragmented model used in traditional classrooms today needs to be reevaluated with students' future success as the number one priority.

Chapter 2

PROBLEM EVIDENCE AND PROBABLE CAUSE

Problem Background

As previously stated in Chapter 1, the students' inability to make connections between subject areas has become a major issue in all levels of education. Evidence of this problem was addressed nationally through programs such as America 2000. This program provides students with real life, hands on experiences. Although the program addressed the problem of curriculum irrelevancy, it was not successful locally because of teacher and community resistance. This resistance stemmed from the program's inability to take into account each schools' unique personality.

Locally, the problem has been addressed by organizing district-wide and individual school committees. The district committee, termed the Knowledge Expansion Committee was recently disbanded to allow individual buildings to address the problem of fragmented curriculum. The majority of the schools in the district has formed District Learning Teams (D.L.T.'s) to remedy the fragmentation on a more personalized basis.

Problem Evidence

A variety of means were used to document the problem. Teachers at the two schools were issued a survey. Also, a randomly selected group of students were interviewed at both grade levels in the target schools. The teacher researchers conducted an interview with the curriculum director from the district. Lastly, teacher observation from previous years was considered when documenting this problem.

The student interview, which was conducted on a one-to-one basis, went into further detail as to the use of information learned in the classroom (see appendix A). Forty-three percent of the students stated that they never used the information they learned in one subject to help them with another. In addition, fifty percent of the students stated they never studied the same topic in two or more subject areas.

In order to obtain a different perspective, the teacher researchers distributed a survey to all teachers at both target elementary schools (see appendix B). Sixty percent of the teachers surveyed felt that their grade level curriculum only sometimes allowed the students to make connections between the subjects.

The results from the surveys and interviews are parallel with the original observations the teacher-researchers made; students are not making connections between core disciplines.

Probable Causes of Problem

Data to indicate probable cause factors were found through the curriculum director, teacher survey, and teacher observation.

The teacher-researchers also interviewed the curriculum director to gain insight into the curriculum aspect of the problem. She felt that a lack of relevancy and lack of connectedness do exist within our current system. She stated that a lack of time and resources, an overloaded curriculum and scheduling restraints contribute to the problem. Her statements correspond with the teacher-researchers findings as to probable causes of the problem. Another intent of the interview with the curriculum director was to determine the district's view of a fragmented curriculum. One cause she stated as one of the biggest problems is the lack of time for planning and restructuring the curriculum as well as the lack of instructional time in the classroom. Another probable cause mentioned by the curriculum director is the lack of resources that are needed to supplement the curriculum in order for it to be current and relevant. Finally, she mentioned that the way the school day is currently structured does not allow flexibility for the teachers. The combination of these three elements contributes to the lack of connectedness in what is being taught.

The teacher survey included four questions designed to elicit how the teachers felt about the mandated curriculum and the amount of flexibility in their classrooms.

Table 1 represents data on the percentages of teachers not completing curriculum mandates in each subject. Data for six subjects are presented: Language arts, math, reading, science, social studies and spelling. These six subjects were chosen because they comprise the third and fifth grade curriculum.

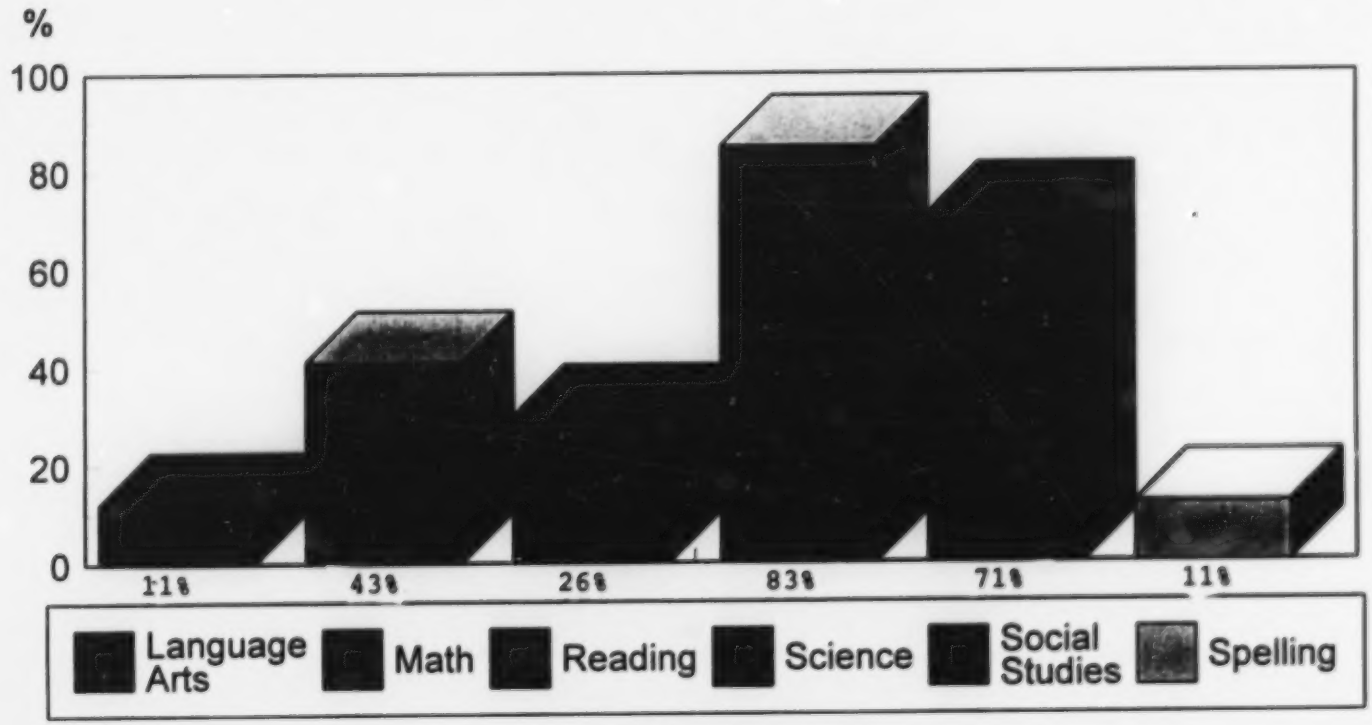
The data presented in Table 1 indicates seventy-one percent of the teachers do not complete the mandated social studies curriculum. The percentages were also relatively high for math, reading and science. The low percentages in language arts and spelling may be indicative of the push in recent years to integrate these two subjects into all areas of curriculum. Overall, sixty-three percent of the teachers reported that they completed less than eighty percent of the curriculum.

The inability to complete the mandated curriculum may relate to the lack of flexibility in the classroom. The teacher survey indicated that fifty-eight percent of the teachers felt they needed more flexibility within their classroom. Yet the pressure to complete all of the curriculum often pushes teachers back into a rigid schedule for convenience sake.

Teacher observations were also used to establish probable cause. The teacher-researchers' personal experiences within the classroom have paralleled what was mentioned in the survey related to mandated curriculum and flexibility. Oftentimes the need to complete a topic in order to prepare for the districts criterion referenced test preceded the importance of making connections . Through observation of colleagues the teacher-researchers found other teachers are encountering similar problems. Many of these educators are reluctant to make

TABLE 1

Percentages of Teachers not completing curriculum mandates in each subject area



changes to address the issue due to a lack of innovation, knowledge and time and a fear of change. It may be a combination of these plus an overloaded curriculum and lack of flexibility, time and resources that contribute to the students' inability to make connections among subject areas.

The current problem of an overloaded, fragmented and often irrelevant curriculum stems from a history of decisions in education being led by world events. The Cold War and "space race" resulted in the federal funding for reforming the curriculum to emphasize math and science (Jenkins and Tanner, 1992). For a number of years these two subjects became the focal point of education until the realization that skills in reading and writing were deteriorating; hence, the "back-to-basics" movement. Shoemaker (1989) states that it is these reforms of the 1960's and 70's that have led to more curriculum reforms which in turn has led to fragmentation. Allan Vann, as quoted by Shoemaker (1988) once said:

> The elementary school curriculum cup runneth over, and no one at the state level appears to recognize either the magnitude of the runoff or the disillusionment of those who must mop up the spillover. (pg 10)

He continues by citing the health curriculum that in the past few years has added personal safety, drug and alcohol abuse, and HIV to the curriculum. With all of the very important topics added to the curriculum, nothing has been taken away. In the end, Shoemaker finds that an effective way to meet these curriculum problems is to use an integrated approach.

A summary of probable causes for the problem from the site, and from the literature included the following elements:

1. lack of time for planning and restructuring the curriculum,
2. lack of resources that are needed to supplement the curriculum in order for it to be relevant and current,
3. structure of the school day does not allow for flexibility for teachers,
4. constant increase of mandated curriculum,
5. teachers reluctant to make curriculum changes.

Chapter 3

THE SOLUTION STRATEGY

Review of the Literature

Analysis of probable cause data suggested reasons related to the lack of time for planning and restructuring the curriculum, the lack of resources needed, the inflexibility in the school day, a constant increase of mandated curriculum and teacher reluctance to make curriculum changes. In addition to these data, research literature suggested the following probable causes: education being led by world events, continuing to add to the health curriculum without taking anything away and teachers reluctant to make curricular changes.

The literature search for solution strategies was based on the probable cause data. After reviewing the above data the teacher-researchers concluded that curricular design and assessment techniques should be addressed.

The questions related to curricular design included: 1) What major learning outcomes should our students be achieving? 2) How do we keep our students prepared for the ever-changing skills needed in society? 3) How do we prepare our students to be life-long learners? 4) How do students learn best? 5) How should the day be scheduled to best teach the mandated curriculum?

The questions related to assessment techniques included: 1) How can assessments be made meaningful to the students? 2) How can students be accurately assessed, taking into consideration different learning styles?

A review of these questions suggested the following topics be researched: integrated curriculum structures, curriculum of the future and learning styles.

In her study of the student learning process, Shoemaker (1989) found information relating the way the human brain functions with how we learn. She found that the brain takes many things and processes and organizes them at one time. Also, we may focus on one task or idea, but the brain process parts and wholes simultaneously. While in the process of finding meaning to this learning, the brain is looking for previous experiences or patterns to connect the material in order to make it relevant. Finally, the brain responds to peripheral stimuli. In order to make the material relevant to the brain, educators need to teach ideas holistically rather than in fragmented sections throughout the day.

Jacob's (1991) findings parallel the above mentioned theory as she focuses on the way we share information. She finds that the current fragmented schedule we use in schools tends to shatter the curriculum into separate pieces of knowledge. To demonstrate that students are affected by this shattered curriculum, Jacobs writes about the following conversation between fourth graders:

> Jody, a fourth grader, was emphatic. "Reading is not taught in science. That's different. Reading is stories, you know, fiction." David, her classmate, chimed in, "Reading is always after recess." I (Jacobs) asked, "What is social studies then?" Renee said, "Social studies is when we work in groups, probably because it's social." (pg 22)

The conversation demonstrates the problem of lack of transfer discussed in chapters one and two. Jacobs' suggestion is to stop teaching in fragments and

implement an interdisciplinary approach. Jenkins and Tanner (1992) agree. They go on to suggest that the schedule should not determine the curriculum, but instead, the objectives and functions of the curriculum should determine the organization structure of the school.

While reviewing the literature the topic of technology came up often. In Shoemaker's 1989 study of how futurists felt, she uncovered the following information as it related to technology and education:

- Increasing change, both in pace and complexity with technology as the predominant factor causing change.
- Short half-life of knowledge in which knowledge itself undergoes rapid restructuring.
- The high tech influence on an economy in which "Microbioelectronics (biogenetics, physics, robotics, telecommunications, microelectronics, and the like) rule.

The way many futurists feel educators can prepare students for these components of the future is to integrate technology and other skills needed for the future into the curriculum. Shoemaker further states the schools will also need to focus on higher order thinking skills, communication skills, and flexible lifelong learning habits.

The above mentioned skills are all evident during the process of learning. Ornstein (1988) discusses the importance of process over product in his article, "The Irrelevant Curriculum." He states that too often the curriculum is right-

answer oriented. With the workbook and textbook as the center of instruction, educators rarely allow students to become actively involved or engage in problem-solving, hypothesizing, or exploring. Orstein suggests that stressing the process (synthesis, wholeness, coherence and personal meaning (pg 23)) rather than product would help students become aware of how they learn, an important skill for the future.

A summary of the literature which addressed the questions related to curriculum design suggested the following strategies:

1) The curriculum should be integrated to relieve the overcrowding of subject matter.

2) Information should be taught "in wholes" to best facilitate how the human brain receives information.

3) A more flexible schedule should be adopted to allow students to more easily transfer knowledge from one subject to another.

4) Technology should be integrated into the daily schedule.

5) Process, other than product, should be emphasized.

Many alterations to the normal classroom routine had to be made in order to implement the solution strategy possibility. Principal approval was needed at both schools in order to go to a more flexible daily schedule. A different approach was also discussed with the library media specialists in order to better provide the students with use of technology. All persons involved were willing and supportive

of the changes and the implications these changes would have on the teacher-researchers' students.

Solution strategy possibilities related to assessment technique were found primarily in the literature under Authentic or Alternative Assessment. Lorrie Shepard (1989) writes:

> In today's political climate, tests are inadequate and misleading as measures of achievement. Assessment tasks should be redesigned -- indeed, are being redesigned -- to more closely resemble real learning tasks. (pg 6)

The first question to be addressed is how to make assessment meaningful to the students. Jenkins and Tanner (1989) suggested that assignments stimulate interest; that it should not be "mechanical drudgery" (pg 11). They also encourage the use of higher-order thinking skills and problem solving related to real life needs. Sandra Schnitzer (1993) agrees. After being frustrated that students were not able to apply what they had learned, she looked to the Mid-Continental Regional Educational Laboratory (McREL), who found that students' learning was lacking thinking skills that were needed to use the knowledge.

McREL as cited by Schnitzer (1993) suggested the following thinking processes to be integrated into tasks: comparison, classification, structural analysis, supported induction, supported deduction, error analysis, constructing support, decision making, investigation systems analysis, problem solving, experimental inquiry and investigation (p. 32). By using these thinking skills from the higher end of Bloom's Taxonomy, assessments may become more meaningful.

In order to help make assessment meaningful, educators must also take into consideration a students learning and working style. Krechewsky (1991) tells us that a child responds to visual, auditory, and kinesthetic cues. Assessments must also allow students to use the style they are most comfortable with, and allow them various opportunities to do so.

A summary of the literature which addressed the questions related to assessment suggested the following strategies:

1) Integrate higher level thinking skills into the assessment tasks.

2) Respond to all students learning styles.

3) Assessment should relate to real life situations.

4) A variety of alternative assessments should be used such as portfolios, projects, journals, teacher-made tests, and writing across the curriculum.

Project Outcomes

The first terminal objective of this problem was related to the problem of overloaded curriculum and a lack of flexibility within the classroom. The teacher survey indicated sixty-percent of the teachers felt the curriculum did not allow them to always make connections between subject areas and sixty-three percent were not able to complete the mandated curriculum. The probable cause data from Chapter Two and the review of the literature from this chapter suggested the need for students to learn in wholes rather than fragments. Also, the literature showed that the quality of what is taught is more important than quantity. Therefore:

As a result of integrating the curriculum during the period, January 1994 to March 1994, the third and fifth grade students at the target elementary schools will increase their ability to transfer knowledge among subject areas, as measured by student interviews, teacher observation and student journal entries.

Probable causes gathered from Chapter Two also indicate the students do not recognize that what they learn in school can and should be used in real life situations. A review of the literature showed that in order for school to be meaningful to the students, assessments should represent real life situations. Therefore:

As a result of alternative assessment, during the period January 1994 through March 1994, the student will be able to connect what they learn to everyday life as evidenced by teacher observation and student interviews and student journal entries.

In order to accomplish the terminal objectives, the following intermediate objectives define the major strategic procedures proposed for the problem resolution.

1) As a result of developing a series of lesson plans which will connect many disciplines, an integrated unit will be available.

2) As a result of flexible scheduling during the period January 1994 to March 1994, the implementation of an integrated curriculum will then be accomplished.

3) As a result of developing criteria sheets for portfolios during the summer 1993, alternative assessment will be prepared for implementation.

4) As a result of developing writing activities involving all subject areas for use with the integrated unit during the fall of 1993, alternative assessment will be prepared for implementation.

5) As a result of developing tests and projects that include higher level thinking during the period fall 1993, alternative assessment will be prepared for implementation.

Proposal Solution Components

In order to increase the number of connections made between subject areas and the relevancy of the curriculum, two elements are acknowledged: the need to change the way the curriculum is presented and the need to change the way students' learning styles are addressed. These are related to the terminal objectives in that they attempt to change student awareness. The intermediate objectives address the issues presented in the terminal objectives and attempt to correct the Issues in the original problem statement.

Chapter 4

ACTION PLAN FOR IMPLEMENTING THE SOLUTION STRATEGY

Description of Problem Resolution Activities

The action plan is designed to address two major solution components: Integrating the curriculum and alternative assessment.

The integrated curriculum will be developed in the fall of 1993 by two elementary teacher researchers. Using current state and district mandated curriculum, teacher designed curriculum, and teacher and student surveys, integrated units will be developed. These units will connect the core disciplines, integrate technology into the classroom and demonstrate the relevance of the curriculum in a real life setting. The teacher researchers will design separate units for the target grade levels, third and fifth. Although the lessons will differ, the focus of integration will be consistent throughout the units.

The alternative assessment phase will begin in January of 1994 and continue throughout the implementation of the integrated units. The purposes for this change in assessment are: variation of assessing student performance, application of what is learned using original and creative means and connection of the unit to students' everyday lives.

The implementation plan is presented below in outline form and in chronological order.

1. Development of an integrated curriculum.

   A. Who: Two elementary school teachers/researchers will design the curriculum change.

   B. What: They will create grade level appropriate units to connect the following core disciplines: math, reading, science, social studies, language arts and spelling.

   C. When: This will occur during the fall of 1993.

   D. Where: Work will take place at Walt Whitman and Mark Twain Elementary Schools.

   E. They will use state and district mandated and teacher-designed curriculum to design a unit that combines core subject areas.

   F. Why: To allow students to connect, transfer and apply information among the subject areas.

2. Development of authentic assessment to evaluate the previously mentioned unit.

   A. What: They will design the following assessment pieces to accompany the integrated unit.

      1. Portfolio criteria sheet.
      2. Journal topics.
      3. Writing across the curriculum.
      4. Test that includes higher order thinking questions.

B. How: After designing the unit they will choose from collective resources a variety of authentic assessment ideas.

C. Why: To allow students to reflect on and practice knowledge and behaviors learned during the integrated unit.

3. Incorporate technology and multi-media materials into the daily curriculum.

A. Who: The previously mentioned elementary school teachers/researchers along with the Library Media Specialist.

B. What: Develop activities related to the integrated unit that incorporates use of computers, CD ROM, video.

C. How: Library media specialists and teachers will facilitate students' use of resources.

D. Why: Increase students' familiarity with technology as well as their ability to incorporate technology into their learning.

4. Implement the integrated curriculum.

A. What: The teachers will present an integrated curriculum involving the following disciplines: reading, language arts, math, social studies, science, and spelling.

B. When: This will occur between January 1994 and March of 1994.

C. Where: In a third grade classroom at Mark Twain Elementary and a fifth grade classroom at Walt Whitman elementary.

D. How: Through the use of flexible scheduling, the unit will be presented over a six-week period.

Methods of Assessment

Assessing the effects of the intervention will be accomplished by giving the students a survey similar to what was given before the intervention and interviewing students using questions similar to those used in the original interview of students. The interviews will be administered to the target group in March of 1994.

The ability to transfer knowledge throughout the core disciplines will also be determined through teacher-made tests, projects involving multiple subject areas and student connection journals.

Chapter 5

EVALUATION OF RESULTS AND PROCESS

Implementation History

The terminal objectives of the intervention addressed the problem of overloaded curriculum and a lack of flexibility within the classroom as well as the need for meaningful assessments. Teacher surveys, observations and student interviews indicated that over half the teachers felt the curriculum did not allow them to make connections between subject areas or complete the mandated curriculum. Therefore, the terminal objectives stated:

> As a result of integrating the curriculum during the period, October 1993 to December 1993, the third and fifth grade students at the target elementary schools will increase their ability to transfer knowledge among subject areas, as measured by student journal entries, student interviews and teacher observation.
>
> As a result of alternative assessment, during the period October 1993 through December 1993, the students will be able to connect what they learned to everyday life as evidenced by teacher observation, student interview, and student journal entries.

The development of a curricular component to address the problem of overloaded and fragmented curriculum, lack of flexibility and the need for meaningful assessments in the student population of the targeted elementary schools began with a review of the teacher surveys and student interviews. This took place at the beginning of the 1993-94 school year. After reviewing the interviews and surveys, the two teacher researchers determined that "the webbed"

model of integration and authentic assessment would be used to address the issues presented (Fogarty, 1991).

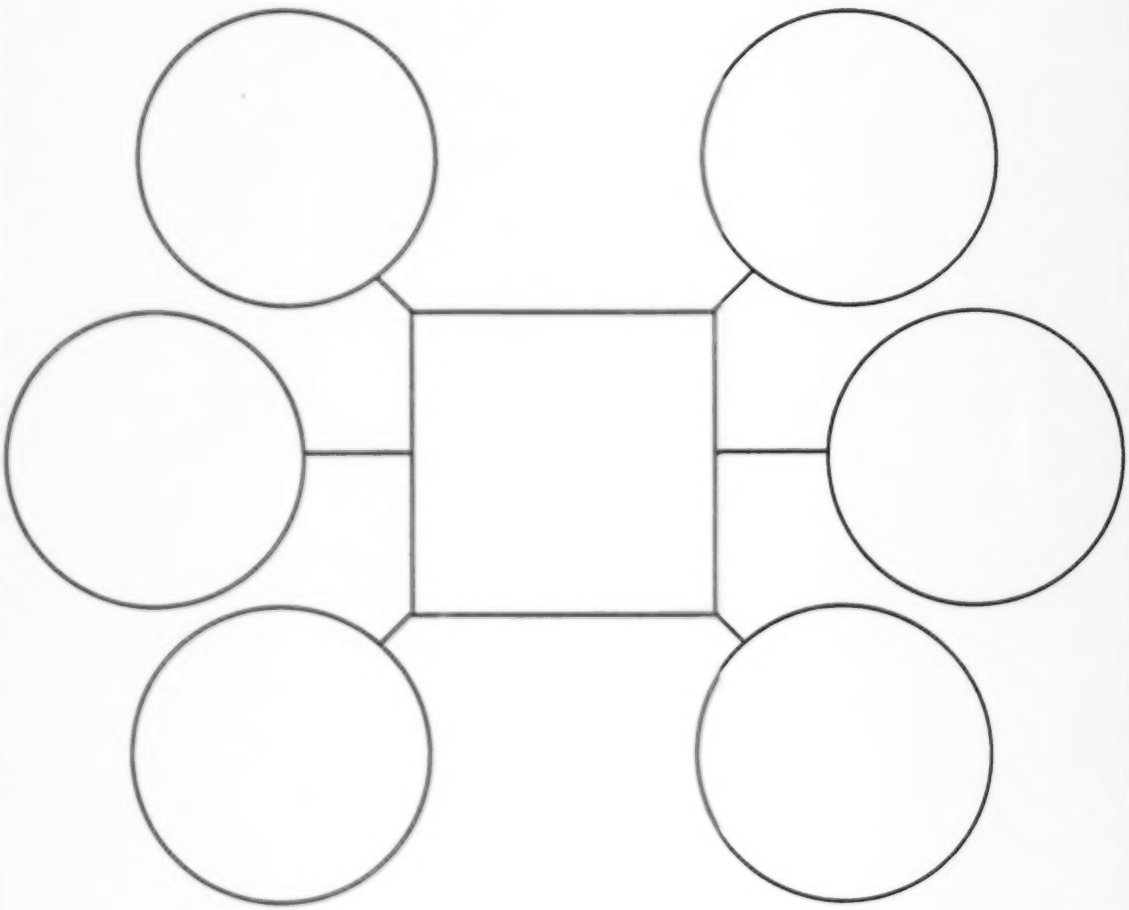
During the fall of 1993 the teacher researchers created a six-week unit that followed the webbed model of integration. Webbed integration involves presenting a broad theme and webbing it into curriculum content for the two targeted classrooms (Fogarty, 1991). The teacher researchers used a combination of district-mandated and teacher-designed curriculum. The teacher-designed curriculum needed administrative approval which was granted in the fall of 1993. The purpose of the unit was to allow students to connect, transfer and apply information among subject areas (see webbed model, pg. 30).

The teacher researchers decided to use conflict as their broad theme. During the development of the unit, the teacher-researchers did not integrate math into the unit due to the need to fulfill state mandates in that area. All other academic areas (reading, language, spelling, science and social studies) were integrated. In addition, there was a focus on social skills with a strong emphasis on conflict management.

Some of the district-mandated curriculum used for fifth grade was the study of the civil war, folktales and myths and life skills involving drug education. The district-mandated curriculum used for third grade consisted of fairy tales and life skills. The teacher-designed curriculum for both grade levels involved writing skills and most of the social skills activities. Due to special building curriculum the third-

▶ THINK BACK: RE-DESIGN ◀

Think back to units you've just done and, as an interdisciplinary team (or a grade level team), see if you can find a theme that might have worked for all of you.



Notes & Reflections

grade teacher-researcher at Mark Twain also incorporated multiculturism into the unit.

In order to allow students to reflect on and practice knowledge and behaviors learned during the integrated unit teacher-researchers designed authentic assessment pieces. They also found assessment ideas from collective resources which included other teachers, magazines, workshops, classes and commercial textbook materials. The teacher-researchers began by designing short and long term portfolio criteria sheets (see Appendix C). Criteria sheets were also designed for many projects to be assigned for the unit (see Appendix D).

Writing is another assessment tool the teacher-researchers planned to incorporate into the unit. Daily journal writing was one chosen activity to be used to assess writing and conflict management skills. Also, there were many writing activities developed with the purpose to assess student learning and to prepare students for the writing portion of the state test. The teacher-researchers planned to have students use a variety of writing styles including expository, narrative and persuasive (see Appendix E). The final assessment tools planned for the unit were tests which contained higher order thinking questions (see Appendix F).

During the fall of 1993, the teacher-researchers worked with the library media specialists from Walt Whitman school and Mark Twain school to develop activities related to the integrated unit. These activities incorporate the use of computers, CD ROM and videos. Throughout the unit, the library media specialists and teachers facilitated students' use of the resources. The teacher-researchers

planned to use the technology in conjunction with research projects to be assigned (multicultural for third grade and Civil War people and battles for fifth grade). The two major goals for incorporating technology were to increase students' familiarity with technology and increase their understanding of how to incorporate technology into their learning.

In January of 1994, the teacher-researchers introduced the integrated unit on conflict at the third grade classroom at Mark Twain and the fifth grade classroom at Walt Whitman. The unit began with a kick-off project involving the making of a poster on how to deal with conflict. The students also wrote paragraphs to accompany their posters. Other projects that both classrooms participated in were writing and responding to Dear Abby letters, role playing conflict situations that might occur in the classrooms or at recess and expository essays on how to deal with conflicts. In addition both classes studied folktales/fairytales. The emphasis was put on the action of the stories as related to the conflicts involved. As a culminating activity, both classes wrote personal narratives describing a conflict they faced in their life.

Some activities done only in the fifth grade classroom consisted of activities relating to the Civil War. Some of these activities were:

- Slavery outline (note-taking technique)
- Persuasive essay on the Black Codes
- Speech on significant people and events of the Civil War
- Battles booklet detailing the major battles of the Civil War

- Map work on the Confederate and Union states
- Novel unit on Lincoln: A Photobiography by Russell Freedman
- An ABC big book on the Civil War

The activities done only in the third grade classroom consisted of activities relating to multiculturism. Some of these activities were:

- Autobiography/Family Tree
- Map work on students' country of origin
- Expository essay on the culture of the country being studied
- Daily journal to keep up to date of current events in their country
- Speech on the problems their ancestors had when they were immigrants in the United States

Presentation and Analysis of Project Results

The first terminal objective required that the students at the target third and fifth grade classrooms would increase their ability to transfer knowledge among subject areas. The student interview given before the unit was implemented showed that fifty-seven percent of the students used information learned in one subject to help them. In the interview given after the unit was completed, eighty-four percent of the students felt they had used information in one subject to help in another. This shows a twenty-seven percent increase in students making connections between the subjects.

Student journal entries were another tool used to measure the students ability to make connections between subjects. Some examples of student comments relating to connectedness between subjects are:

- We are able to understand other subjects better.
- We can learn two things at once with only one explanation.
- When you do things separately it can get confusing.
- It helps us understand other subjects.
- It will help especially when you're older because you would need to combine other subjects.

Of the 39 student journal entries written on integration, only three students felt that the conflict unit did not help them with connections between subjects.

These data indicate the first terminal objective was accomplished successfully for the students. The teacher researchers observed in the students a higher interest level in all subject areas. The teacher-researchers were also able to complete mandated curriculum without fragmentation.

The second terminal objective required that the students at the target third and fifth grade classrooms would be able to connect what they learned to everyday life. The student interview asked "How can you use what you learn in school in your everyday life?" Fifty-one percent of the students stated they could use the writing and/or how to deal with conflicts in their lives. At the conclusion of the unit the teacher-researchers had their class brainstorm a variety of ways to use what they learn in school in their everyday life. The fifth grade class came up with

twenty different ways. The third grade class came up with twenty-six different ways.

These data indicate the level of students' awareness was raised in regard to students connecting what they learned to everyday life. Both teacher-researchers experienced this student awareness through selected activities. One activity done at the conclusion of the unit was student role-playing of real life conflict situations. The students were given a specific conflict to act out without a resolution. They then role-played the situation and used the information they learned to resolve the problem. Most of the students used techniques and vocabulary taught during social skill lessons from the conflict unit. One example of the vocabulary that was used is an "I" message. This is when a student states how they feel about a situation ("I feel _____ when _____ because _____") rather than accusing the other person. This activity led the teacher-researchers to believe that most students could use the conflict management technique learned in real life situations.

Another activity that allowed the students to demonstrate their understanding of relating school knowledge to real life situations was the writing of a personal narrative. The students were asked to write about a conflict they have recently faced, either internally or externally. At the end of the essay they were also asked to explain the changes they would make with the same conflict after studying conflict management and resolution. Once again the students demonstrated their understanding by using conflict management techniques and vocabulary taught

throughout the social skill lessons. Students also referred to these techniques and vocabulary in their daily journals.

Reflections and Conclusions

The implementation of the integrated unit and authentic assessment proved successful. At the end of the implementation, most of the students demonstrated the capability of making transfers between subjects as well as to real life situations.

A critical component at the integration part of the implementation was the flexibility in terms of scheduling and curriculum mandates. Without administrative support, allowing this flexibility, having an integrated curriculum would be very difficult.

Another important component of the program of integration and authentic assessment was being able to work and plan as a team. This allowed the teacher-researchers to share new ideas and information as well as brainstorm activities. In addition, they were able to reflect upon successes and failures throughout the implementation process. Also, integration requires more planning time than the traditional fragmented curriculum, however, working in a team lessened the time burden on the teacher-researchers.

Chapter 6

DECISIONS ON THE FUTURE

The Solution Strategy

The data indicate that the implementation plan should be continued. The students' inability to transfer learning among subject areas has been a concern to educators and administrators in the district. The need to complete the mandated curriculum and the lack of flexibility in the classroom led to curriculum overload, fragmentation, and irrelevancy. This, in turn, led to the students not making connections among the subject areas. A major focus of this intervention was to present the curriculum in an integrated fashion, therefore, allowing students to see first-hand the relationship among the core disciplines. Data indicate that this portion of the implementation was also successful.

In addition, students were able to demonstrate their knowledge through the use of authentic assessment. This included portfolios, criteria sheets, role playing, journal writing, writing across the curriculum and tests with higher order thinking skills. Through these assessments we observed the students participated more eagerly than with traditional assessment techniques. Most importantly, students were able to see first hand the relationship between school and real life.

Additional Applications

In order to accommodate specific situations, there are a variety of ways to implement an integrated curriculum into the classroom. One possibility is to complete a full-year emersion into integration. This would require a great deal of planning time and would work best if this were approached as a team. Another option is to implement short-term units throughout the year. This would require less planning, but would at least introduce students to making connections between subjects.

If a teacher is not comfortable with or does not have the flexibility to implement an integrated curriculum, authentic assessment could be used alone, in a fragmented curriculum. This would allow students to make connections to real life.

Dissemination of Data and Recommendations

In order to expand on integration, release time or summer pay should be offered to teachers who are interested in creating grade-level-appropriate integrated units. The units could be shared with all teachers at that particular grade level throughout the district, as well as among different grade levels. This would ensure that overlapping would not occur between grade levels. This might also encourage teachers who are reluctant to change, to try something new because much of the planning would already be completed.

Technology is another area that should be considered when updating the curriculum. Through a team approach, using teachers and library media specialists, technology can be integrated into the classroom on a daily basis. This would, again, require release or paid summer time for planning. There are also grants available for equipment and inservice if teachers choose to take advantage of them.

Throughout this project, we have described many changes to the traditional classroom and in this chapter we have made suggestions that we feel would help make these changes. As successful as this implementation plan has been, it would not be possible without teachers who are willing and wanting to change, put in longer hours, update their personal knowledge and cooperate with others. Most importantly, the teachers need to realize that with innovation there will be mistakes or problems that need to be remedied. It is what we learn as we solve these problems that help keep education changing for the better.

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APPENDICES

Appendix A

STUDENT INTERVIEW

1. Last year, did you study the same topic in two or more subjects?

2. If so, which subjects?

3. Did you ever use information learned in one subject to help you with another subject?

4. What was your schedule last year?

5. What subjects do you remember studying?

6. What was the most memorable thing you remember from last year?

Appendix B

TEACHER SURVEY

1. What grade level do you teach?

   A. K-2 B. 3-4 C. 5-6 D. Position other than grade level teacher

2. Years of experience (Total # of years in all districts)

   A. 0-2 B. 3-6 C. 7-10 D. More than 10

3. Last year, how much of the mandated curriculum did you complete?

   A. 90% or above B. 50-80% C. 20-50% D. Less than 20%

4. If you did not complete all of the mandated curriculum, which of the following subjects were you not able to complete? (Check all that apply)

   ____ science ____ reading ____ P.E.

   ____ social studies ____ language arts ____ music

   ____ math ____ spelling ____ art

5. How do you feel about the number of curriculum mandates in your grade level?

A. Definitely not enough B. Could be more C. Just right D. Too much

6. How much flexibility is in your daily classroom schedule?

A. Definitely not enough B. Could be more C. Just right D. Too much

7. In your opinion, how relevant is the curriculum to your students' daily lives?

A. Not relevant B. Somewhat relevant C. Mostly relevant D. Always relevant

8. How often does you grade level curriculum allow you to make connections for your students between subjects?

A. Never B. Sometimes C. Rarely D. Always

Appendix C

SHORT TERM CRITERIA SHEET

BATTLES BOOKLET

1.	Accurate Information .	20 pts	_____
2.	Follows directions	5 pts	_____
3.	Neatness	10 pts	_____
4.	Illustrations	10 pts	_____
5.	Creative	5 pts	_____
		50 pts	_____

Directions:

Appendix D

LONG TERM CRITERIA SHEET

FOLK TALES/MYTHS

1. PAPA JOHN:

CHARACTERISTICS	10	_____
COMPREHENSION	20	_____

2. JOURNEY TO THE UNDERWORLD

SEQUENCE CHAIN	10	_____
WORD WEBS	20	_____

3. THE PEOPLE WHO COULD FLY

PAPER PLATE	20	_____

4. THE KIDNAPPING

BOOKLET	20	_____

Appendix E

EXPOSITORY WRITING PROMPT

Using the resources you brought for your country, choose one topic that would be the most interesting to your group. For example, you might want to learn more about economics, education, government, religion or any other topic that is of interest to you. Write an essay that will give the facts and details about the topic your group chose.

- You should focus on one topic relating to the country you are studying.
- Take some time to plan your paper on the graphic organizer.
- Be sure to include specific facts.
- Organize your ideas carefully.
- Check that you have correct sentences, punctuation, and spelling.

Appendix F

Name_____

SOCIAL STUDIES/LANGUAGE

Test Project

Civil War

A. There were five levels of slave life. Name two levels. (8 points)

_____ _____

In the space below draw a picture that would show the type of life a slave would have in the levels you named above. Write a caption to go with each picture. Be neat.

B. Explain what you think Lincoln meant when he said "...as I would not be a slave, I would not be a master." (5 points)

BEST COPY AVAILABLE

Lindberg P. and Belieff J. (1991)

1) Who was the most famous general from the South? (2 pts)

2) Who was the president of the Confederacy? (2 pts)

3) Who shot Lincoln? (2 pts)

4) Which side wanted slavery to continue? (2 pts)

5) List <u>two</u> reasons the Civil War began? (2 pts)

6) What country fought in the war we have been studying in the conflict unit? (2 pts)

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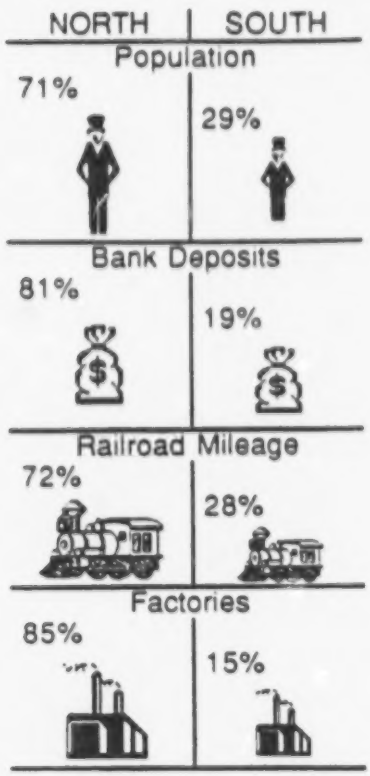
C. What were "Black Codes?" Why were they necessary according to Southern States? Name two codes. (5 points)

D. Study the graph below. Explain what the graph is about. 3 points)



E. ... Select one battle to discuss and explain in detail. Write your response on the back of p 3 (10 points).

Name_____

F. Circle each adjective and underline the noun it tells about. ~~Write S-S—the simple subject.~~ ~~(47 points)~~ (38 ÷ 3)

1. The slender young soldier shivered as he stood at attention.
2. Every drummer boy faced many hardships.
3. The band played spirited melodies to lead the tired hungry soldiers forward.
4. Overworked doctors helped the sick soldiers.
5. "Hardtack" is a tough, unsalted biscuit.
6. A lucky regiment would have a good cook.
7. Drummer boys had to follow strict military rules.
8. Commanding officers punished soldiers for serious violations.
9. Most drummer boys made twelve dollars a month.

G. Stand up and sit down. Take deep breath and continue. (1 point)

H. Write <u>two</u> or <u>three</u> sentences telling me what you know about two of the following people. (3 pts each)

Ulysses S. Grant

Robert E. Lee

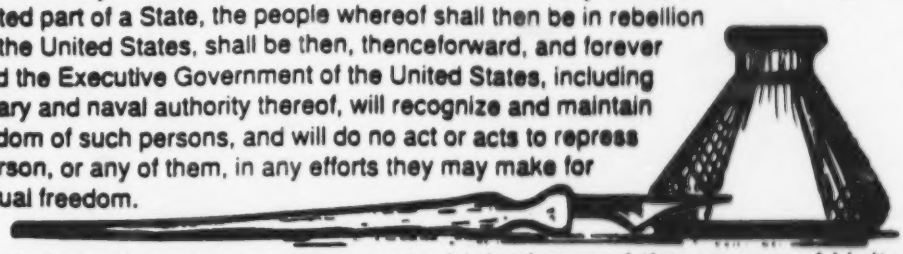
Harriet Tubman

I. On the next page read the article about the Emancipation Proclamation and answer the two questions. Be sure to elaborate. (8 points)

H

The Emancipation Proclamation

That on the first day of January, in the year of our Lord one thousand eight hundred and sixty-three, all persons held as slaves within any State, or designated part of a State, the people whereof shall then be in rebellion against the United States, shall be then, thenceforward, and forever free; and the Executive Government of the United States, including the military and naval authority thereof, will recognize and maintain the freedom of such persons, and will do no act or acts to repress such person, or any of them, in any efforts they may make for their actual freedom.



The text above is part of a document which changed the course of United States history, the Emancipation Proclamation. The Emancipation Proclamation, issued by President Abraham Lincoln on January 1, 1863, declared that all slaves in Confederate territories at war against the Union were free. This document played a role in the North's success in the Civil War.

Before the Emancipation Proclamation, Southern slaves kept many Southern factories and farms in production while Confederate soldiers went to war. After Lincoln issued the proclamation, thousands of newly freed Southern slaves headed north. Many of them joined Union troops in the fight to abolish slavery.

The Emancipation Proclamation did not abolish slavery in all slave states. Four Union states—Kentucky, Missouri, Delaware, and Maryland— remained slave states. Lincoln feared that if he banned slavery in these states, they would join the other slave states in seceding from the Union.

The terms of the Emancipation Proclamation were created as wartime policies and were not considered to be permanent. Because of this, Lincoln devoted himself to supporting passage of the 13th Amendment, which permanently abolished slavery in the United States.

1. How did the Emancipation Proclamation solve the problem of decreasing enlistment in the Union army and navy?

_____

_____

_____

2, How do you think Southern plantation owners reacted to the Emancipation Proclamation? _____

_____

_____

_____

_____

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5

J. What subjects were integrated during this unit. Do you think it is important or helpful to do integrated units? Why or why not? (1 pt)

K. What projects or activities have helped you learn the most and how did they help? (1 pt)

6

L. Write a story about this soldier on the back of this page. You may color the picture. (12 points)

Scale:

	112 or more	A+
Total points	111-101	A
	100	A-
	99	B+
112	98-91	B
	90	B-
	89-80	C
Your total	79	C-
	78-68	D
	67 or less	F

M. Smile, you are done!!